AMENDMENTS TO THE CLAIMS

1. (Original) A process for obtaining a solid catalyst component for ethylene polymerization and copolymerization, wherein a carrier of particulate silica is impregnated with a catalytically active portion including titanium, magnesium, chlorine, alkoxy groups and at least one organometallic compound of the groups 1, 2, 12 or 13 of the periodic table, the process comprising the steps of:

(a) impregnating an activated particulate silica in particles using a solution of an organometallic compound of the groups 1, 2, 12 or 13 of the periodic table, in an inert organic solvent;

(b) removing the supernatant liquid from the step (a);

(c) preparing a solution obtained by reacting at least one magnesium compound, selected from magnesium halides and magnesium alkoxides and at least one titanium compound selected from titanium alkoxides and titanium halogen alkoxides;

(d) impregnating the silica obtained on (b) using the solution prepared in (c);

(e) optionally reacting the solid obtained in (d) with a reducing agent;

(f) reacting the solid obtained in (d) or (e) with a halogenating agent;

(g) treating thermally the solid obtained in (f);

(h) washing the solid obtained in (g) with an inert organic solvent;

(i) optionally washing the solid obtained in (h) with a solution of one or more organometallic compounds of the groups 1, 2, 12 or 13 of the periodic table.

2. (Original) A process for obtaining a solid catalyst component according to claim 1, wherein the activated particulate silica used in step (a) is a microspheroidal, porous silica.

3. (Currently Amended) A process for obtaining a solid catalyst component according to claim 1 ~~or 2~~, wherein the activated particulate silica used in step (a) has an average particle size ranging from 10 to 120 μm.

4. (Currently Amended) A process for obtaining a solid catalyst component according to ~~any one of claims 1 to 3~~ claim 1, wherein the activated particulate silica used in step (a) has a surface area ranging from 250 to 500 m^2/g.

5. (Currently Amended) A process for obtaining a solid catalyst component according to ~~claims 1 to 3~~ claim 1, wherein the activated particulate silica used in step (a) has a pore volume ranging from 1.0 to 2.0 ml/g.

6. (Original) A process for obtaining a solid catalyst component according to claim 1, wherein the organometallic compounds of groups 1, 2, 12 or 13 of the periodic table used in step (a) is trimethylaluminum, triethylaluminum (TEAL), methylaluminum dichloride,

methylaluminum sesquichloride, isobutylaluminum dichloride, isobutylaluminum sesquichloride, ethylaluminum dichloride (EADC), diethylaluminum chloride (DEAC), ethylaluminum sesquichloride (EASC), tri-n-hexylaluminum (Tn-HAL), tri-n-octylaluminum (TnOAL), butyl ethylmagnesium (BEM), butyl octylmagnesium (BOMAG), methylmagnesium chloride or ethylmagnesium chloride.

7. (Original) A process for obtaining a solid catalyst component according to claim 1, wherein the magnesium compound used to prepare the solution of the step (c) is magnesium dichloride, magnesium diethylate, magnesium di-n-butylate, magnesium diisopropylate or magnesium diisobutylate.

8. (Currently Amended) A process for obtaining a solid catalyst component according to claim 1 ~~or 7~~, wherein the magnesium compound used to prepare the solution of the step (c) is used in an amount ranging from 0.0024 to 0.24 g of magnesium per g of silica.

9. (Original) A process for obtaining a solid catalyst component according to claim 1, wherein the titanium compound used to prepare the solution of the step (c) is titanium tetra-n-propylate, titanium tetra-n-butylate, titanium tetra-i-propylate, titanium tetra-i-butylate or the corresponding titanium mono- or di-chloroalkoxides.

10. (Currently Amended) A process for obtaining a solid catalyst component according to claim 1 ~~or 9~~, wherein the titanium compound used to prepare the solution of the step (c) is used in an amount ranging from 0.01 to 1 g of titanium per g of silica.

11. (Currently Amended) A process for obtaining a solid catalyst component according to ~~any one of claims 1, 7, 8, 9 or 10~~ claim 1, wherein the molar ratio Ti/Mg used to prepare the solution of the step (c) is comprised between 0.3 and 4.

12. (Original) A process for obtaining a solid catalyst component according to claim 1, wherein the reducing agent used in the step (e) is Na-alkyl, Li-alkyl, Zn-alkyl, Mg-alkyl and corresponding aryl-derivatives, Grignard compounds of the type RMgX or polyhydrosiloxanes.

13. (Currently Amended) A process for obtaining a solid catalyst component according to claim 1 ~~or 12~~, wherein the reducing agent used in the step (e) is $(CH_3)_3SiO[(CH_3)HSiO]_nSi(CH_3)_3$, $(CH_3HSiO)_4$, $(CH_3HSiO)_3$, $H_3Si\text{-}O\text{-}SiH_2\text{-}OSiH_3$ or phenylhydropolysiloxanes in which the hydrogen atoms can be partially replaced by methyl groups.

14. (Currently Amended) A process for obtaining a solid catalyst component according to claim 1 ~~or 12~~, wherein the reducing agent used in the step (e) is used in an amount ranging from 0 to 2 moles per mole of titanium.

15. (Original) A process for obtaining a solid catalyst component according to claim 1, wherein the halogenating agent used in the step (f) is methylaluminum dichloride, methylaluminum sesquichloride, isobutylaluminum dichloride, isobutylaluminum sesquichloride, ethylaluminum dichloride (EADC), diethylaluminum chloride (DEAC), ethylaluminum sesquichloride (EASC), $SiCl_4$, $SnCl_4$, HCl, Cl_2, $HSiCl_3$, aluminum chloride, ethylboron dichloride, boron chloride, diethylboron chloride, $HCCl_3$, PCl_3, $POCl_3$, acetyl chlorides, thionyl chloride, sulfur chloride, methyl trichlorosilane, dimethyl dichlorosilane, $TiCl_4$, VCl_4, CCl_4, t-butyl chloride, n-butyl chloride, chloroform, 1,1,1-trichloroethane, 1,1,2-trichloroethane, 1,2-dichloroethane or dichloromethane.

16. (Currently Amended) A process for obtaining a solid catalyst component according to claim 1~~ or 15~~, wherein the halogenating agent used in the step (f) is used in an amount ranging from 0.5 to 3 moles of halogenating agent per mole of titanium.

17. (Original) A process for obtaining a solid catalyst component according to claim 1, wherein the thermal treatment of the step (g) is conducted from 0.5 hour to 5 hours and at a temperature from 60°C to 120°C.

18. (Original) A process for obtaining a solid catalyst component according to claim 1, wherein two different organometallic compounds are used in the step (i) to wash the solid obtained in step (h).

19. (Currently Amended) A process for obtaining a solid catalyst component according to claim 1~~ or 18~~, wherein the two different organometallic compounds in the step (i) are fed together, mixed in the same solution.

20. (Currently Amended) A process for obtaining a solid catalyst component according to claim 1~~ or 18~~, wherein the two different organometallic compounds in the step (i) are fed together, in individual solutions.

21. (Currently Amended) A process for obtaining a solid catalyst component according to claim 1~~ or 18~~, wherein the two different organometallic compounds in the step (i) are fed one after the other, in individual solutions.

22. (Currently Amended) A process for obtaining a solid catalyst component according to ~~claims 1, 18,19, 20 or 21~~ claim 1 wherein the organometallic compound used in the step (i) is methylaluminum dichloride, methylaluminum sesquichloride, isobutylaluminum dichloride, isobutylaluminum sesquichloride, ethylaluminum dichloride (EADC), diethylaluminum chloride (DEAC), ethylaluminum sesquichloride (EASC), tri-n-hexylaluminum (Tn-HAL) or tri-n-octylaluminum (TnOAL).

23. (Original) A process for obtaining a solid catalyst component according to claim 1, wherein the inert organic solvent used is hexane, heptane, octane or isoparaffin.

24. (Original) A solid catalyst component for ethylene polymerization and copolymerization, obtained according to the process described in claim 1, comprising a carrier of particulate silica and a catalytically active portion including titanium, magnesium, chlorine, alkoxy groups and at least one organometallic compound of the groups 1, 2, 12 or 13 of the periodic table.

25. (Original) A solid catalyst component according to claim 24, wherein the solid catalyst component morphology is spheroidal.

26. (Original) A solid catalyst component according to claim 24, wherein the solid catalyst has an average particle size ranging from 10 to 120 μm.

27. (Original) A solid catalyst component according to claim 24, wherein the solid catalyst has a surface area ranging from 80 to 300 m^2/g.

28. (Original) A solid catalyst component according to claim 24, wherein the solid catalyst has a pore volume ranging from 0.1 to 1.0 ml/g.

29. (Original) A solid catalyst component according to claim 24, wherein the magnesium is present in an amount ranging from 0.003 to 0.03 g of magnesium per g of solid catalyst.

30. (Original) A solid catalyst component according to claim 24, wherein the titanium is present in an amount ranging from 0.005 to 0.02 g of titanium per g of solid catalyst.

31. (Original) A solid catalyst component according to claim 24, wherein the organometallic compound of the groups 1, 2, 12 or 13 of the periodic table is present in an amount ranging from 0.003 to 0.03 g of metal per g of solid catalyst.

32. (Currently Amended) A solid catalyst component according to claim 24 ~~or 31~~, wherein the organometallic compound of the groups 1, 2, 12 or 13 of the periodic table is an organo-aluminum, an organo-magnesium, an organo-lithium or an organo-zinc compound.

33. (Original) A solid catalyst component according to claim 24, wherein the alkoxy groups is present in an amount ranging from 0.03 to 0.08 g of alkoxy groups per g of solid catalyst.

34. (Currently Amended) A solid catalyst component according to claim 24 ~~or 33~~, wherein the alkoxy groups is n-propoxy, i-propoxy, n-butoxy or i-butoxy.

35. (Original) A solid catalyst component according to claim 24, wherein the chlorine is present in an amount ranging from 0.05 to 0.12 g of chlorine atoms per g of solid catalyst.

36. (Currently Amended) A process for ethylene polymerization and copolymerization wherein is used the catalyst according to ~~one or more of the claims 24 to 35~~ claim 24.

37. (Original) A process for ethylene polymerization and copolymerization according to claim 36, wherein it is carried out in gas phase.

38. (Original) Process for ethylene polymerization and copolymerization according to claim 36 wherein the co-catalyst used in the polymerization process is an alkyl aluminum.

39. (Currently Amended) Process for ethylene polymerization and copolymerization according to ~~claims 36 or 38~~ claim 36wherein the co-catalyst used in the polymerization process is trimethyl aluminum or triethyl aluminum.

40. (Currently Amended) Process for ethylene polymerization and copolymerization according to ~~claims 36, 38 or 39~~ claim 36 wherein mass ratio co-catalyst:catalyst in the polymerization process is between 0.5:1 and 6:1.

41. (Currently Amended) A process for ethylene polymerization and copolymerization according to ~~claims 36, 37 or 38~~ claim 36, wherein the catalyst is fed in dry bulk powder, in paste, in oil suspension or in solvent suspension.

42. (Currently Amended) A process for ethylene polymerization and copolymerization according to ~~claims 36 or 41~~ claim 36, wherein the catalyst is fed directly into the polymerization reactor.

43. (Currently Amended) A process for ethylene polymerization and copolymerization according to ~~claims 36 or 41~~ claim 36, wherein the catalyst is prepolymerized before to be fed into the polymerization reactor.

44. (Currently Amended) A process for ethylene polymerization and copolymerization according to ~~claims 36, 41 or 43~~ claim 36, wherein the catalyst is prepolymerized with ethylene or propylene before to be fed into the polymerization reactor.

45. (Currently Amended) A linear low density polyethylene produced according to the process of ~~the claims 36 to 44~~ claim 36.

46. (Currently Amended) A linear medium density polyethylene produced according to the process of ~~the claims 36 to 44~~ claim 36.

47. (Currently Amended) A high density polyethylene produced according to the process of ~~the claims 36 to 44~~ claim 36.